

May 18, 2016

50065-02166 Version 10

## Warranty Extension: MIL Comes On With DTCs P0301 thru P0304

Supersedes 13-081, dated November 24, 2015, to revise the information highlighted in **yellow**.

### AFFECTED VEHICLES

Year	Model	Trim	VIN Range
2011–13	Odyssey	ALL	Check the iN VIN Status for Eligibility

### REVISION SUMMARY

- Under REPAIR PROCEDURE B – PISTON CLEANING AND RING REPLACEMENT, Replace Parts as Needed for Repair Procedure B, changed bolt count for the 12 x 163 Washer-Bolt (P/N 90005-PAA-A01) under Cyl 1-4 from 8 to 16. Also changed the bolt count for Connecting Rod Bolt from 8 to 6.

### CORRECTIVE ACTION

2011 Models: Complete diagnosis procedure and if necessary, update PCM software (**Procedure A**), replace affected spark plugs then clean pistons and replace the piston rings (**Procedure B**).

2012–13 Models: Complete diagnosis procedure, replace affected spark plugs then clean the pistons and replace the pistons rings (**Procedure B**). No need for software update as 2012–13 model vehicles are equipped with updated software from factory.

### BACKGROUND

American Honda is announcing a powertrain warranty extension as a result of a settlement of a class action captioned, *Soto et al.v. American Honda Motor Co., Inc.*, Case No. 3:12-cv-1377-SI (N.D. Cal.).

The piston rings on certain cylinders may rotate and align, which can lead to spark plug fouling. This can set DTCs P0301 No. 1 cylinder misfire detected, P0302 No. 2 cylinder misfire detected, P0303 No. 3 cylinder misfire detected, P0304 No. 4 cylinder misfire detected, and cause the MIL to come on.

American Honda is extending the powertrain warranty to cover repairs related to engine misfire (that triggers DTCs P0301 through P0304) to 8 years with unlimited mileage from the original date of purchase and has settled a class action based on this remedial measure.

This warranty extension does not apply to any vehicle that has ever been declared a total loss or sold for salvage by a financial institution or insurer, or has a branded or similar title under any state's law.

### CUSTOMER NOTIFICATION

Owners of affected vehicles were sent a class action settlement notice regarding this warranty extension starting in October 2013.

Before doing work on a vehicle, verify its eligibility by doing an iN VIN status inquiry.

Refer customers seeking information about settlement benefits to [www.enginemisfiresettlement.com](http://www.enginemisfiresettlement.com), or instruct them to call **888-888-3082**.

**CUSTOMER INFORMATION:** The information in this bulletin is intended for use only by skilled technicians who have the proper tools, equipment, and training to correctly and safely maintain your vehicle. These procedures should not be attempted by "do-it-yourselfers," and you should not assume this bulletin applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Honda automobile dealer.

## DIAGNOSIS

1. Connect the HDS and check for the following DTCs: P0301 No. 1 Cylinder Misfire Detected, P0302 No. 2 Cylinder Misfire Detected, P0303 No. 3 Cylinder Misfire Detected, P0304 No. 4 Cylinder Misfire Detected.

*Are any of these DTCs stored?*

**YES** – Go to step 2.

**NO** – Stop. This bulletin does not apply. Continue with normal troubleshooting.

2. Remove and check the spark plug(s) on the affected cylinders (example: if P0301 is stored, check the spark plug on cylinder No. 1).

*Are the spark plug(s) fouled?*

**YES** – Proceed to Step 3.

**NO** – Stop. This bulletin does not apply. Continue with normal troubleshooting.

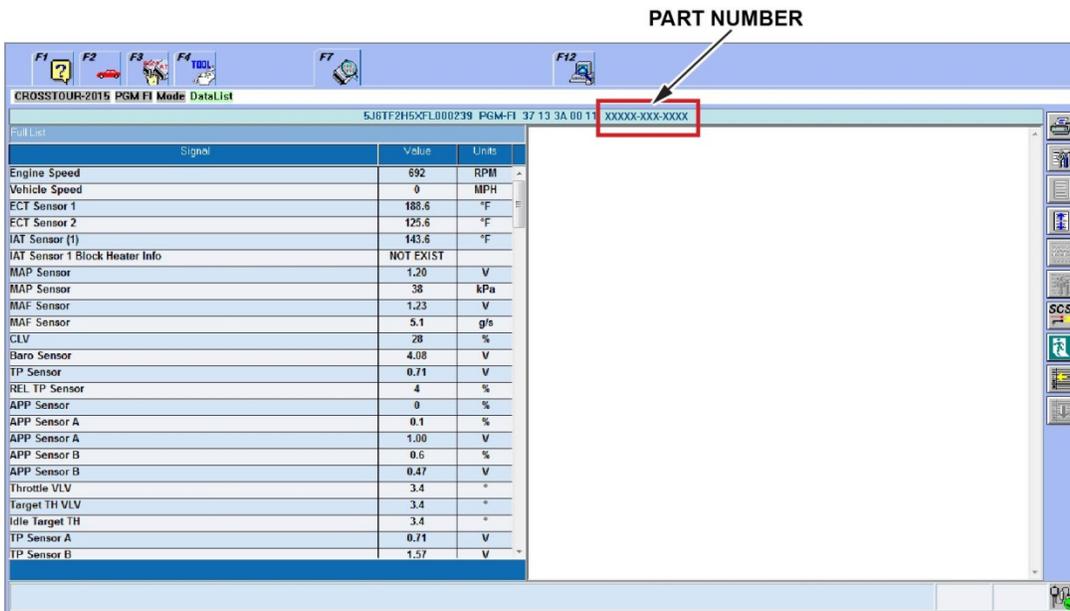
**GOOD**



**NO GOOD**



3. For 2011 Odyssey only: Check the PCM software version P/N located above the **PGM FI Data List**.



Year/Model	Program ID (or later)	Program P/N (or later)
2011 Odyssey (5-speed A/T)	V0A560	37805-RV0-A56
2011 Odyssey (6-speed A/T)	V0A760	37805-RV0-A76
2012–13 Odyssey (ALL)	Software Updated from Factory	

Is the PCM Program ID and/or Program P/N the same or newer than what is listed above, 2011 model years only?

**NO** – The PCM software needs to be updated. Go to REPAIR PROCEDURE A to do the software update, then go to step 4.

**YES** – The correct software is installed. The piston rings on select cylinders need to be replaced. Go to step 4.

4. Note which DTCs are stored in the vehicle.

*Does the vehicle have DTC P0304 stored? (Any combination of DTCs P0301, P0302, P0303, P0304 may also be stored.)*

**YES** – Go to REPAIR PROCEDURE B for the cylinders listed, Cylinders 1–4: Clean the pistons, replace the piston rings, and replace the spark plugs.

**NO** – Go to REPAIR PROCEDURE B for the cylinders listed below:

- Cylinder 1–3: Clean the pistons and replace the pistons rings.
- Cylinder 1–4: Replace the spark plugs.

## WARRANTY CLAIM INFORMATION

**PROCEDURE NOTICE:** 2011 Models, confirm PCM software is or has been updated with the correct version (**Procedure A**). Then piston cleaning, piston ring and spark plug replacement should be done (**Procedure B**). **Failure to follow this process correctly may result in a full debit of the warranty claim to your dealer.**

2012–13 Models: Are equipped with updated software from the factory, no software update is needed. Piston cleaning, piston ring replacement along with the spark plugs should be performed (**Procedure B**).

**FLAT RATE NOTE:** The procedure in this bulletin is different than the service manual. This procedure does not require the complete removal of the power steering pump, catalytic converter(s), engine and transmission, or the crankshaft. As a result, the operation number is unique and the FRT is reduced (**Procedure B**).

OP#	Description	Flat Rate Time	Failed Part Number
1171H2	<b>2011–13 Odyssey: Procedure B</b> Replace piston rings <b>1–3</b> and replaced spark plugs 1–4 (includes diagnosis).	8.5 hrs	13011-5G0-A01
1171H2A	<b>2011 Odyssey: Procedure A</b> Add to update the PCM on <b>2011 Odyssey only</b> .	0.1 hr	13011-5G0-A01
1171H2B	<b>2011–13 Odyssey:</b> Add if replacing piston rings on cylinder 4.	0.8 hr	13011-5G0-A01

Defect Code: 5V500

Symptom Code: JB900

Skill Level: Repair Technician

## PARTS INFORMATION FOR REPAIR PROCEDURE A – SOFTWARE UPDATE

There are no parts needed for REPAIR PROCEDURE A because it is a software update only.

## PARTS INFORMATION FOR REPAIR PROCEDURE B – PISTON CLEANING AND RING REPLACEMENT

NOTE: Do the DIAGNOSIS first to determine which cylinders you will need to repair.

### Required Parts

Part Name	Part Number	Cyl 1-3	Cyl 1-4
Cyl. Gasket (Fr)	12251-R70-A01		1
Cyl. Gasket (Rr)	12261-R70-A01	1	1
Drain Washer 14 mm	94109-14000	1	1
EGR Pipe Gasket A	18716-R70-A01	1	1
EGR Pipe Gasket B	18719-R70-A01	1	1
Ex. Chamber Gasket	18115-R70-A01	1	2
Ex. Pipe Gasket	18212-SA7-003	2	2
Head Gasket Fr. (Valve Cover)	12030-R70-A00		1
Head Gasket Rr. (Valve Cover)	12050-R70-A00	1	1
In. Manifold Gasket (Intake Top Cover)	17146-R70-A01	1	1
In. Manifold Gasket (In. Manifold to Base)	17105-RCJ-A01	1	1
Oil Filter	15400-PLM-A02	1	1
O-ring (7.47 mm x 3.6 mm)	91301-PLC-000	2	2
O-ring (31.2 mm x 4.1 mm)	91314-PH7-003	2	2
Piston Ring Set	13011-5G0-A02	3	4
Pre-chamber Gasket	18393-SDB-A00	1	1
Self-locking Nut (8 mm)	90212-RCA-A01	4	8
Self-locking Nut (10 mm)	90212-SA5-003	9	9
Spark Plug	12290-R71-L01	4	4
Strainer O-ring	15221-RYE-A01	1	1
Timing Belt Bolt	14551-RCA-A01	1	1
Water Gasket Fr.	19411-P8A-A03	1	1
Water Gasket Rr.	19412-P8A-A02	1	1

### Replaced Parts as Needed for Repair Procedure B

Part Name	Part Number	Cyl 1-3	Cyl 1-4
Connecting Rod Bolt (May require up to 6 bolts per cylinder head)	13204-P8A-A01	6	8
Washer-Bolt (12 x 163) (May require up to 8 bolts per cylinder head)	90005-PAA-A01	8	16

### REQUIRED MATERIALS – REPAIR PROCEDURE B

Material Description	Part Number	Quantity
Honda Long-Life Antifreeze/Coolant Type 2	OL999-9011	3 gallons
Genuine Honda Motor Oil 0W-20	08798-9036	6 quarts
Hondabond HT (1 Tube Repairs 5 Vehicles)	08718-0004	1 tube
Genuine Honda Throttle Plate Cleaner	08700-9204	
Nylon Parts Cleaning Brush	(commercially available)	
5/16 ID Flexible Hose	(commercially available)	

### TOOL INFORMATION – REPAIR PROCEDURE B

Tool Description	Tool Number	Quantity
Piston Ring Groove Cleaner	07AAZ-TA5A100	1

## REPAIR PROCEDURE A – SOFTWARE UPDATE

1. For 2011 models only, update the PCM software. Refer to Service Bulletin 01-023, *Updating Control Units/Modules*.
2. Go to DIAGNOSIS step 4 to determine which pistons need to be repaired before continuing to REPAIR PROCEDURE B – ENGINE REPAIR.

## REPAIR PROCEDURE B – PISTON CLEANING AND RING REPLACEMENT

2011 Models: Confirm PCM software is or has been updated with the correct version (**Procedure A**). Continue to (**Procedure B**).

2012–13 Models: Are equipped with the updated software from the factory, no software update is needed. Piston cleaning and piston ring replacement along with the spark plugs should only be done after the diagnosis of the spark plugs has concluded that (**Procedure B**) is required.

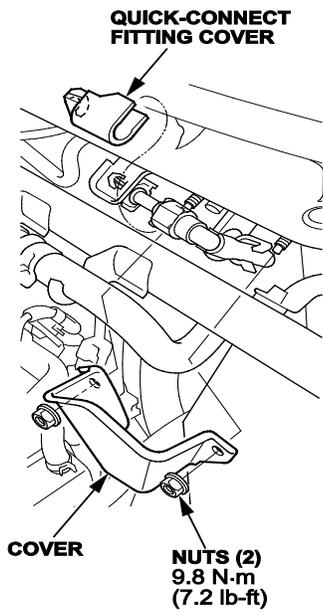
The following service information procedures have been used in full or in part within this service bulletin. For more detail on these procedures, and torque specifications for some components, refer to the service information.

- Battery Terminal Disconnection and Reconnection
- Fuel Pressure Relieving
- Fuel Line/Quick-Connect Fitting Removal
- Air Cleaner Removal/Installation
- Splash Shield Replacement
- Drive Belt Removal/Installation
- Engine Oil Replacement
- Coolant Replacement
- Hydraulic Power Steering Fluid Check/Replacement
- Intake Manifold Removal and Installation
- Timing Belt Removal and Installation
- Warm Up-TWC Removal/Installation
- Cylinder Head Cover Removal
- Cylinder Head Removal and Installation
- Piston Ring Replacement
- PCM Idle Learn Procedure
- Valve Adjustment

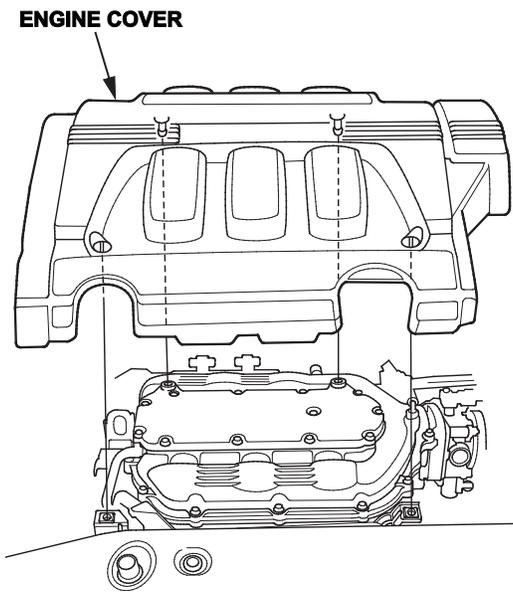
### Piston Removal Procedure

- Use fender covers to avoid damaging painted surfaces.
  - To avoid damaging any wires and terminals, unplug the circuit connectors carefully while holding the connector portion.
  - Mark all the circuits and hoses to avoid misconnection. Make sure they do not contact other circuit wiring, hoses, or interfere with other parts.
1. Relieve the fuel pressure.
  2. Remove both front wheels so you can fully lower the vehicle.
  3. Do the battery removal procedure.

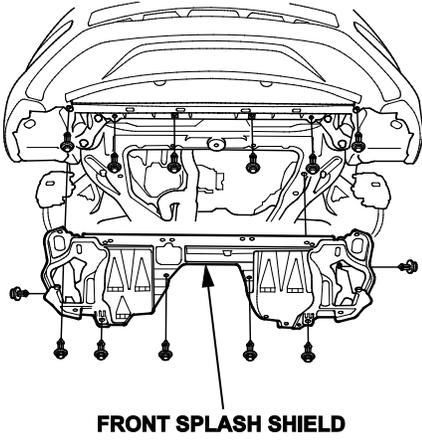
4. Disconnect the fuel feed hose line at the bulkhead.



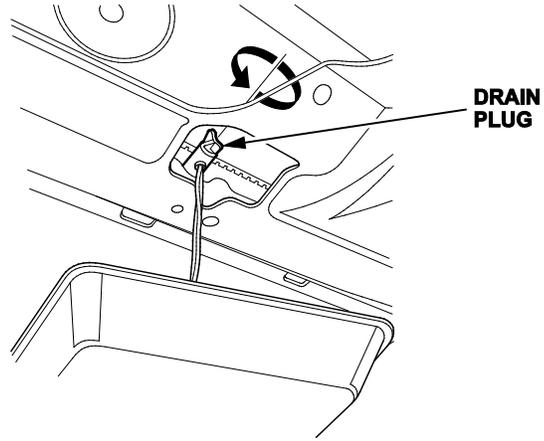
5. Remove the engine cover.



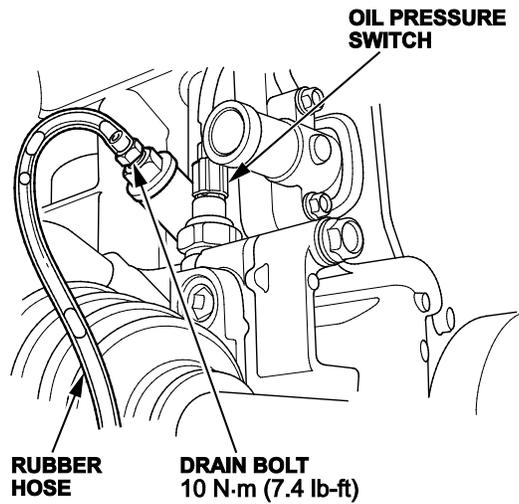
- 6. Remove the radiator cap.
- 7. Raise the vehicle.
- 8. Remove the front splash shield.



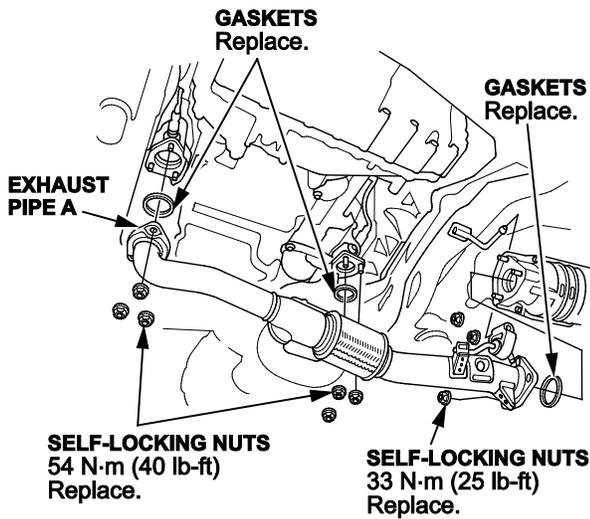
- 9. Drain the engine oil.
- 10. Loosen the drain plug on the radiator, and drain the coolant.



- 11. Install a 5/16th inner diameter rubber hose on the drain bolt located at the rear of the engine block, loosen the drain bolt, and drain all remaining coolant. Then disconnect the oil pressure switch connector.



12. Remove exhaust pipe A.



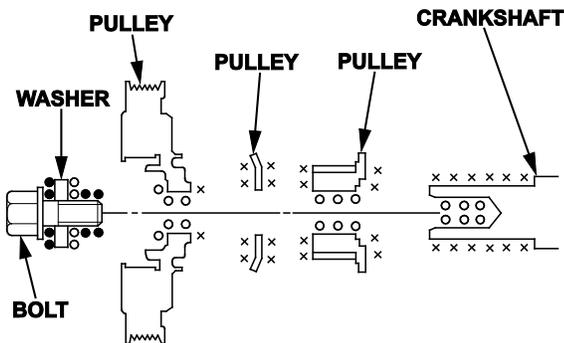
13. Depending on the diagnosis, remove the appropriate WU-TWC support bracket bolts.
14. Remove the EGR lower pipe nuts.
15. Remove the crankshaft pulley bolt but not the pulley.

NOTE: Make sure to apply new oil to the bolt flange and threads before reinstallation.

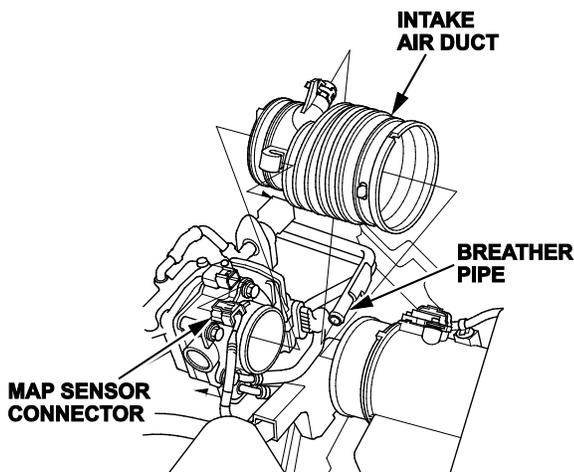
X : Remove any oil

O : Clean

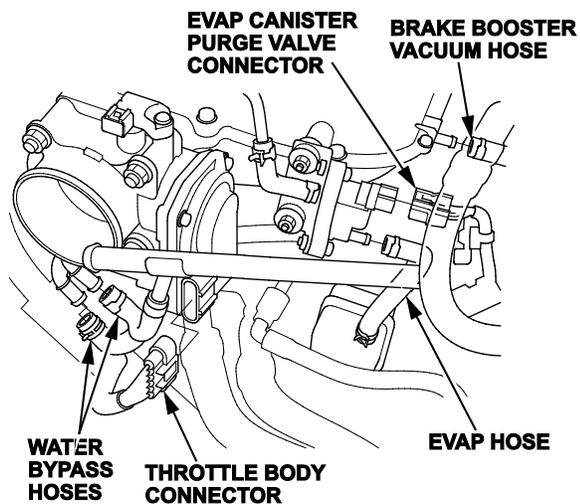
● : Lubricate with new engine oil



16. Lower the vehicle.
17. Disconnect the MAP sensor connector and the breather pipe, then remove the intake air duct.

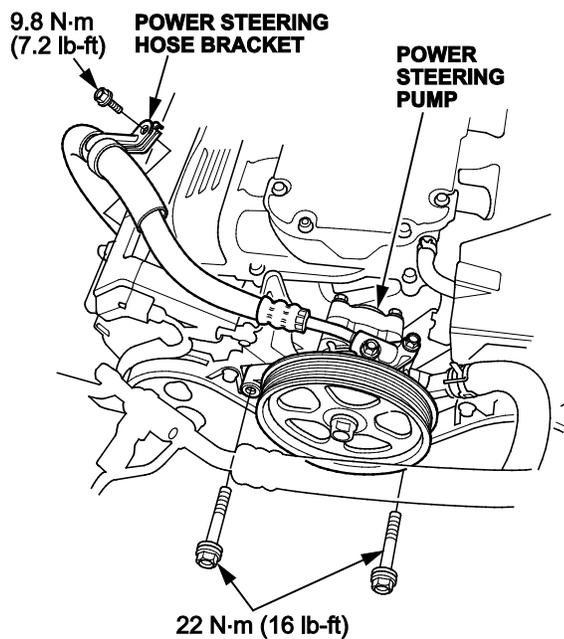


18. Disconnect the throttle body connector, the EVAP canister purge valve connector, the EVAP hose, the brake booster vacuum hose, and the vacuum hose.
19. Disconnect and plug the water bypass hoses.



20. Remove the drive belt.
21. Remove the drive belt auto-tensioner.
22. Remove the power steering pump bolts, the power steering bracket then secure the power steering pump out of the way.

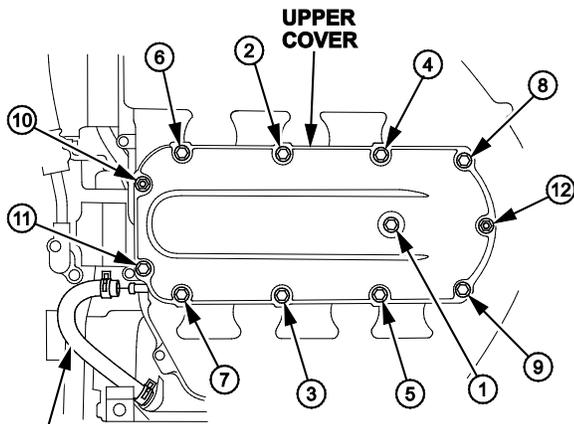
NOTE: Do not remove any of the hoses.



23. Remove the engine harness holder bolt on the side engine mount.
24. Set the engine to TDC cylinder one.
25. Remove the crankshaft pulley.
26. Remove the timing belt.
27. Remove the timing belt idler pulley.

28. Remove the engine intake upper cover and PCV hose.

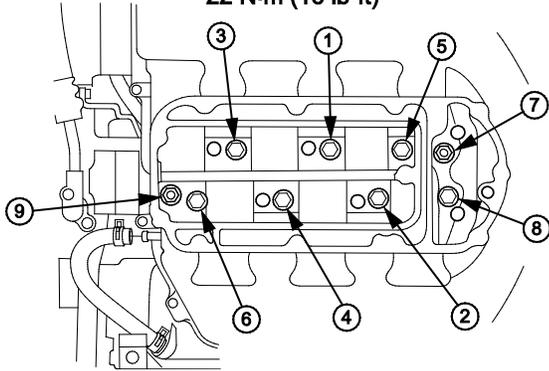
**SPECIFIED TORQUE**  
6 x 1.0 mm  
12 N·m (8.7 lb-ft)



**PCV HOSE**

29. Remove the intake manifold bolts and nuts in three steps, then remove the intake manifold.

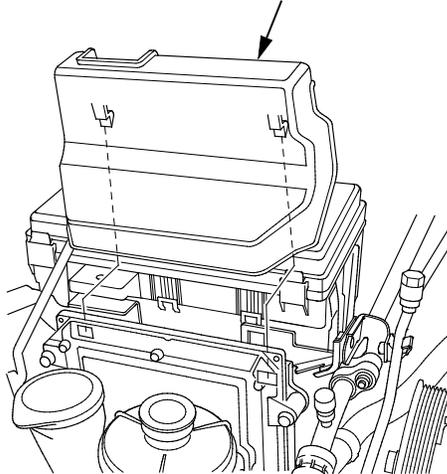
**SPECIFIED TORQUE**  
22 N·m (16 lb-ft)



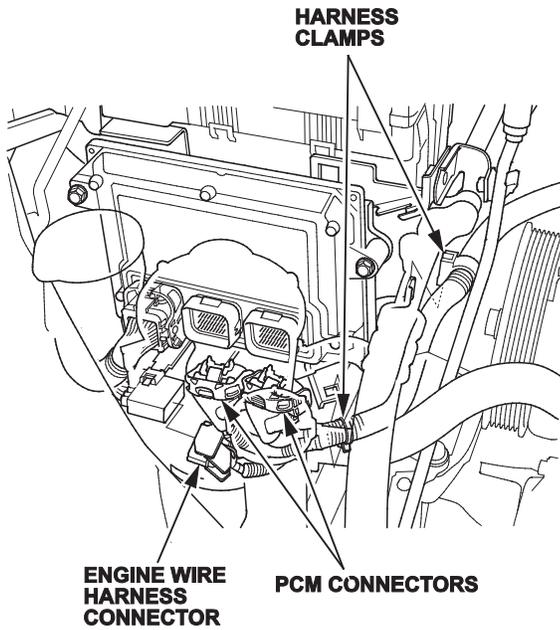
30. Remove the PCM cover.

**KEIHIN SHOWN:**

**PCM COVER**



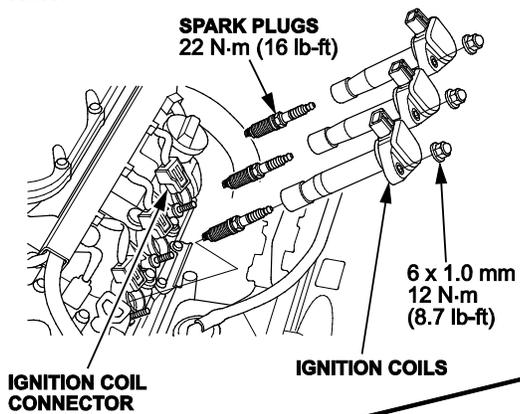
31. Remove the PCM connectors and harness clip. Remove the battery cables from the underhood fuse box.



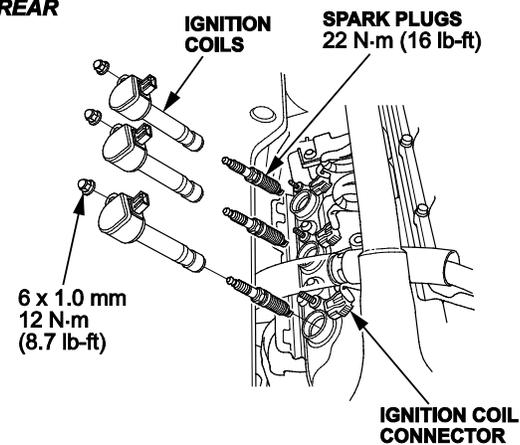
32. Remove the appropriate Ignition coils based on the diagnosis.

NOTE: Depending on the diagnosis, you will either have to remove the rear bank ignition coils or both ignition coil banks.

**FRONT**



**REAR**

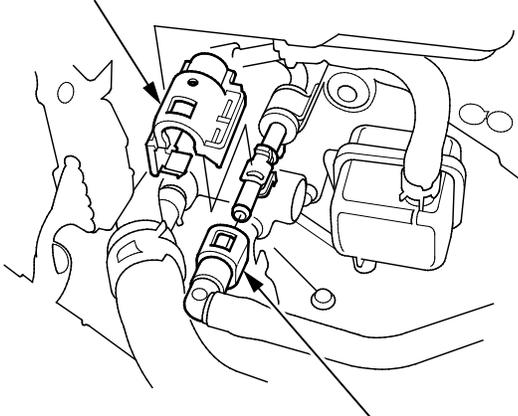


33. Depending on the diagnosis, remove some or all of the following:

- ECT sensor connector
- Front rocker arm oil pressure switch connector
- Rear rocker arm oil pressure switch connector
- CMP sensor connector
- Front A/F sensor one connector
- Rear A/F sensor one connector
- Front secondary HO2S connector
- Rear secondary HO2S connector
- Rocker arm oil control solenoid A connector (bank one)
- Rocker arm oil control solenoid A connector (bank two)
- Rocker arm oil control solenoid B connector (bank one)
- Alternator connector and positive alternator cable
- A/C clutch switch connector
- EGR 5P valve connector
- Engine ground
- Knock sensor
- Fuel injector connectors and clips

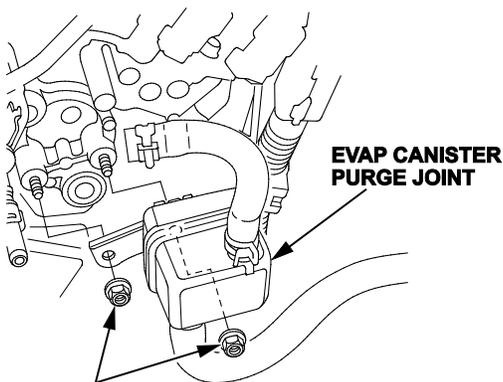
34. Remove the quick-connect fitting cover, then disconnect the fuel feed hose.

**QUICK-CONNECT  
FITTING COVER**



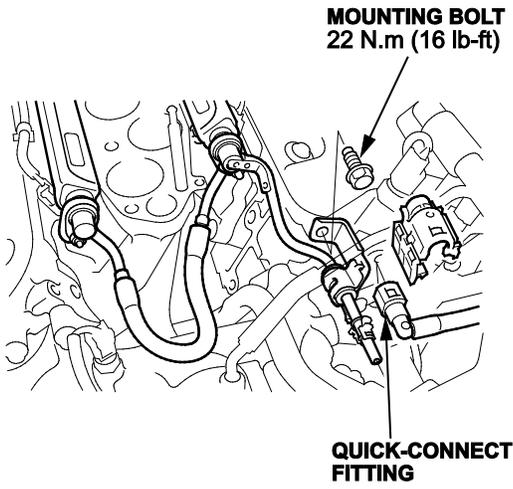
**FUEL FEED HOSE**

35. Remove the EVAP canister purge joint with the bracket.

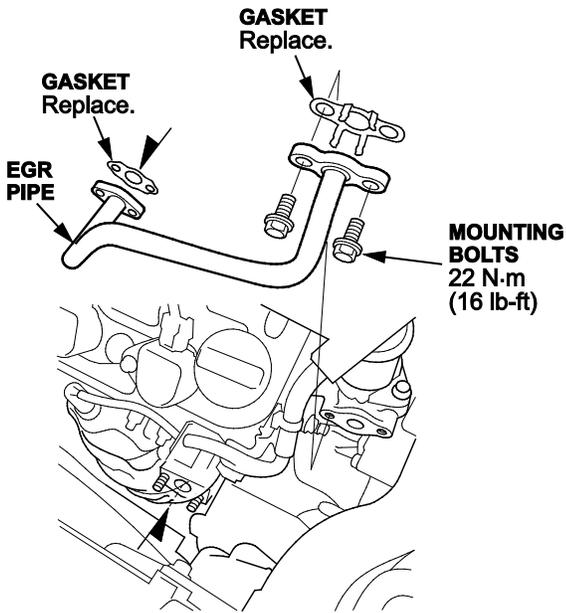


**12 N·m (8.7 lb-ft)**

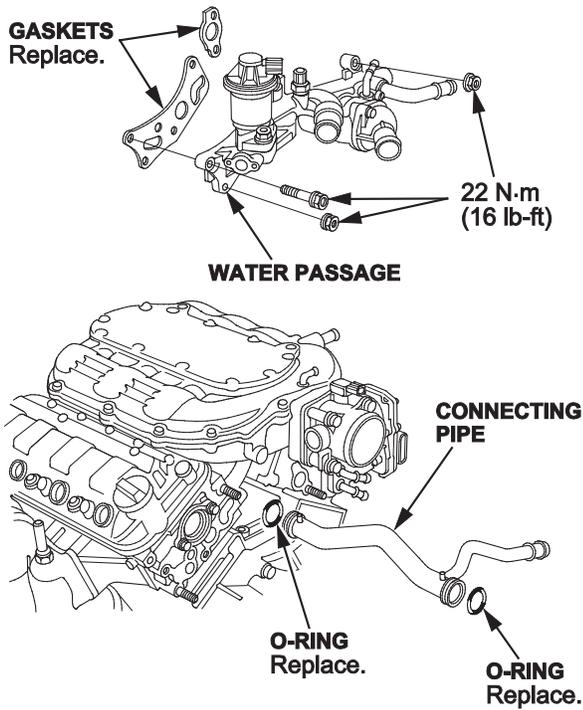
36. Remove the fuel rail connecting joint hose.



37. Remove the EGR pipe mounting bolts, then remove the EGR pipe.

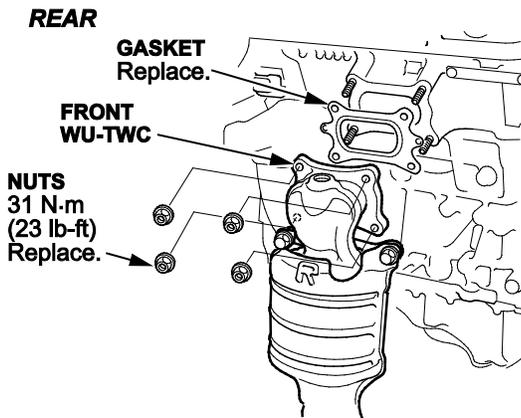
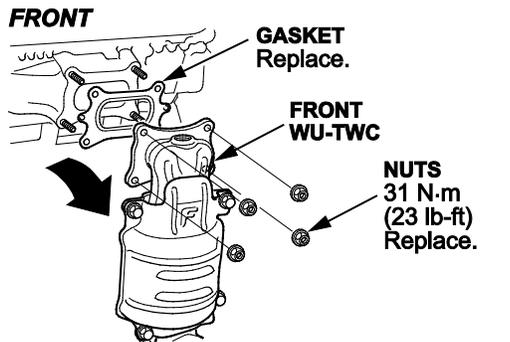


38. Separate the water passage from the heads.



39. Remove the appropriate WU-TWC depending on diagnosis.

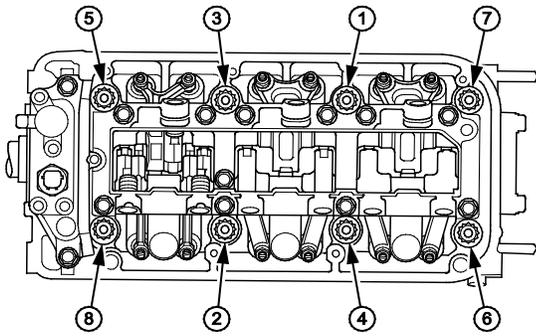
NOTE: Set the WU-TWC aside and cover the opening with shop towels to prevent coolant from entering.



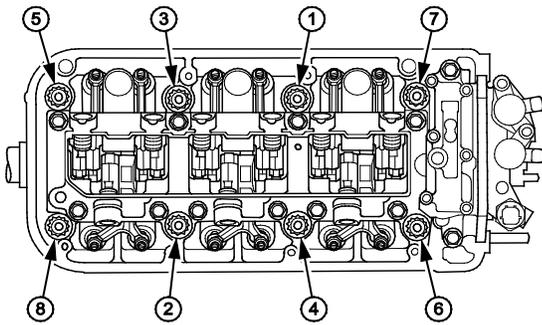
40. Remove the appropriate head with the injector base attached.

NOTE: Depending on diagnosis, you will remove the rear bank head or both heads.

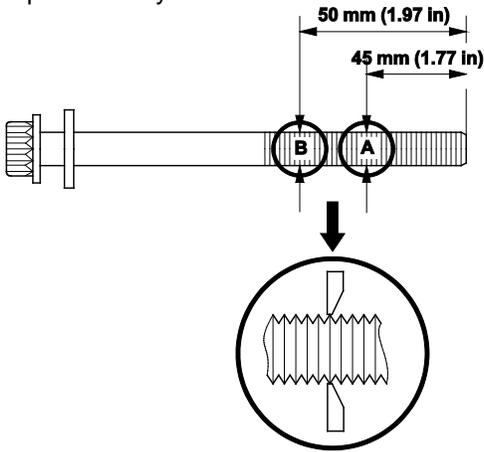
**FRONT**



**REAR**

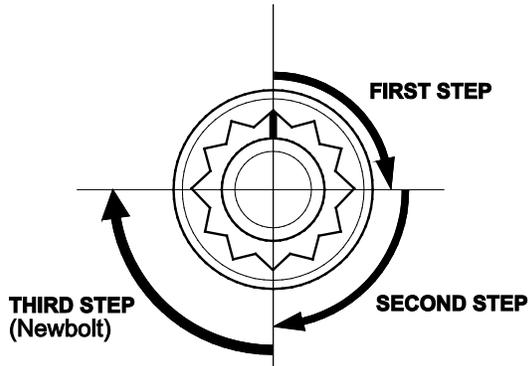


41. Measure the head bolts to determine if they need replacement. If either diameter is less than **11.3 mm (0.445 in)**, replace the cylinder head bolt.



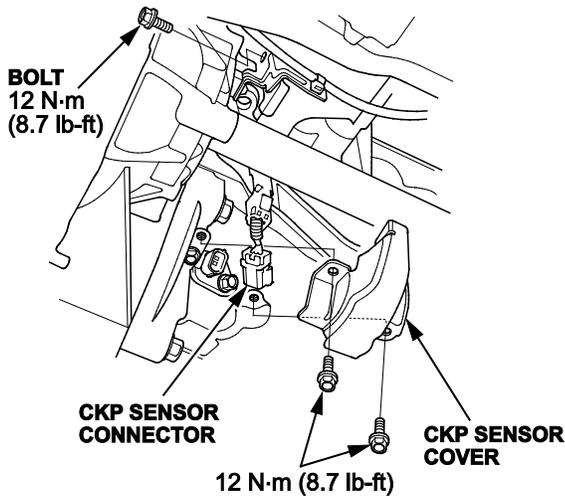
NOTE: Below are the head bolt torque specifications for reinstallation.

- First step: torque the cylinder bolts in sequence to **29 N•m (22 lb-ft)**.
- Second step: tighten in sequence an additional **90 degrees**.
- Third step: tighten in sequence an additional **90 degrees**.
- If the bolts are new, tighten an additional **90 degrees**.

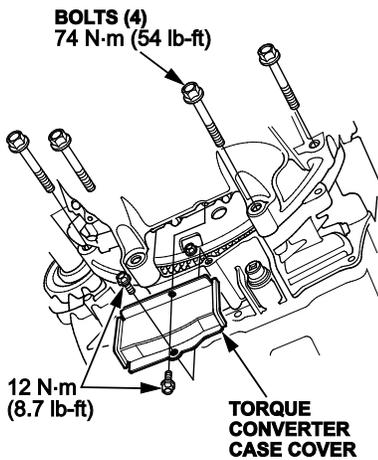


42. Raise the vehicle.

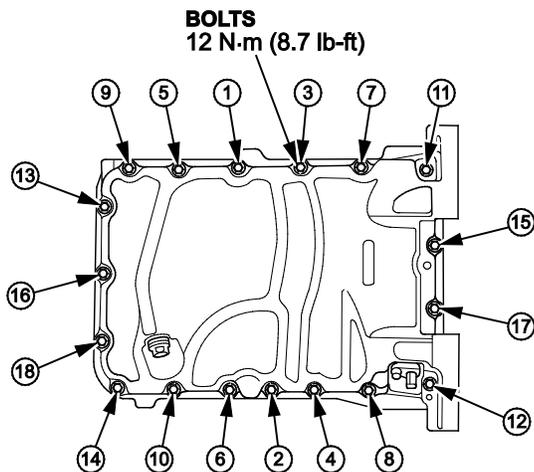
43. Remove the CKP sensor cover and bolts, then disconnect the CKP sensor connector.



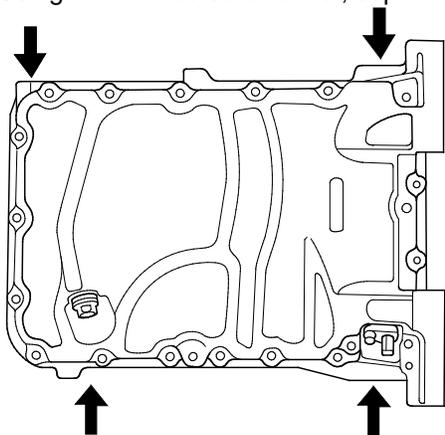
44. Remove the torque converter case cover and the four bolts securing the oil pan to the transmission.



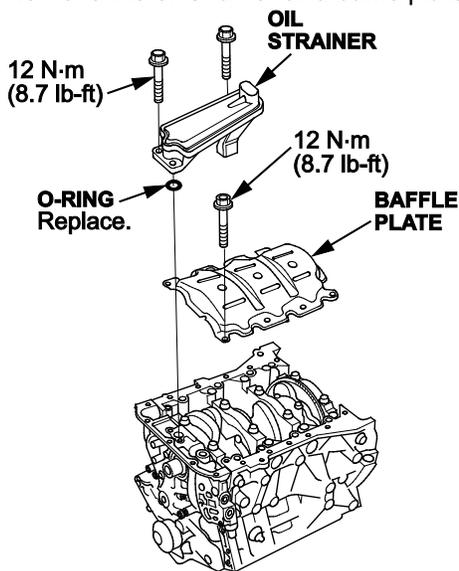
45. Remove all bolts securing the oil pan.



46. Using a flat blade screwdriver, separate the oil pan from the engine block in the areas shown.



47. Remove the oil strainer and baffle plate.

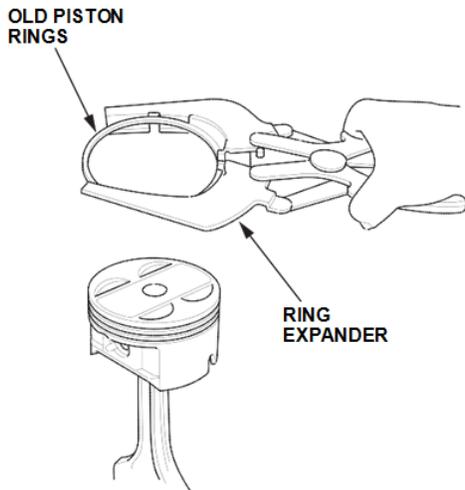


48. Lower the vehicle to a comfortable working height, and place a clean shop towel around the cylinder wall to prevent debris from entering the coolant passage.
49. Remove the appropriate piston depending on diagnosis, then go to PISTON CLEANING PROCEDURE.

NOTE: When removing the piston rod caps, be sure and keep all caps and bolts with their corresponding pistons for reassembly purposes.

## Piston Cleaning and Ring Replacement Procedure

1. Remove the piston rings from the piston using a ring expander. Be careful not to damage the piston.



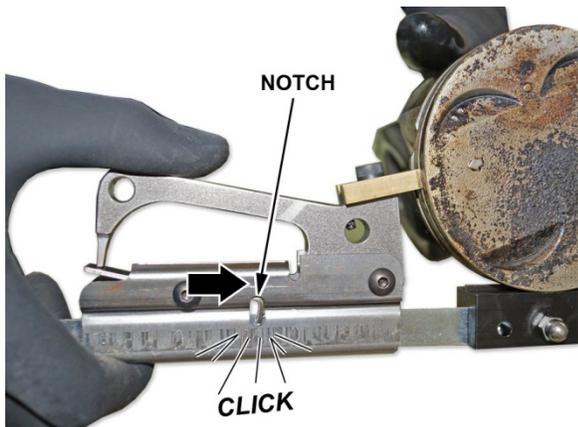
2. Spray the piston head and piston ring grooves thoroughly with Honda throttle plate cleaner.
3. While holding the piston upright in your left hand, take the piston ring groove cleaner tool in your right hand and line up the cleaner tool guides with the second (middle) piston ring groove.



4. Press the handle on the piston ring groove cleaner tool and slide the cleaning bit onto the appropriate piston ring grooves.



5. Once the cleaning bit is in the appropriate ring grooves of the piston, make sure the tool handle clicks in to place.  
NOTE: There is only one notch on the tool for the handle to engage.



6. Hold the piston steady and rotate the tool counter-clockwise five to six times to remove any carbon deposits in the piston ring grooves. **Do not** rotate the tool clockwise.

NOTE: You can watch this procedure in the *Tech2Tech* segment "How to Clean Piston Ring Grooves".



7. Remove the piston groove cleaning tool and clean off the carbon from the tool bit.
8. Finish cleaning the piston with throttle plate cleaner and the nylon brush. **Do not** use a steel wire brush.



NOTE: Below are some examples of before and after pictures. Depending on mileage and running conditions, the pistons will achieve different levels of cleanliness.

**54K PISTON**

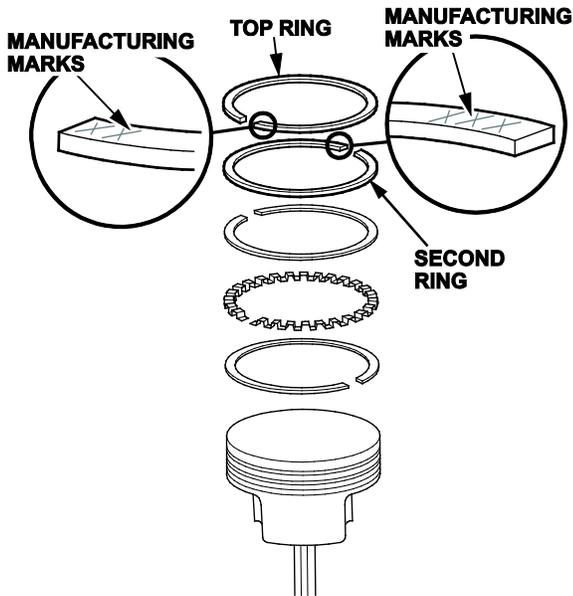
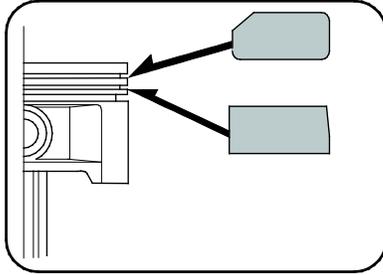


**87K PISTON**



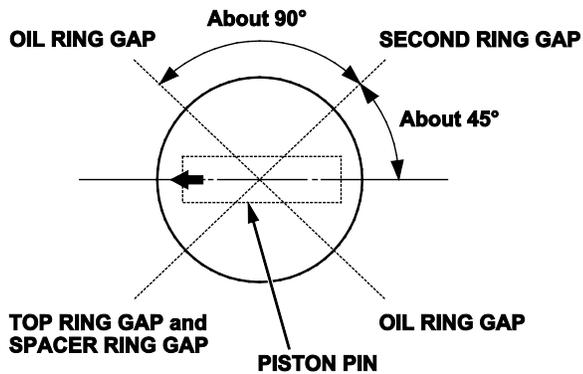
9. Install the piston rings as shown.

NOTE: The first (top) ring has a **1D** manufacturing mark and the second (middle) ring has an **SPR** manufacturing mark. The manufacturing marks must be facing upward.



10. Position the ring end gaps as shown.

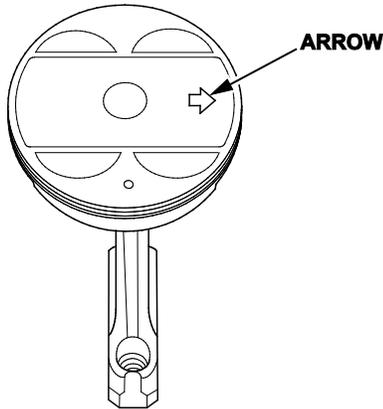
NOTE: If the ring gaps are not positioned correctly, excessive blowby may occur.



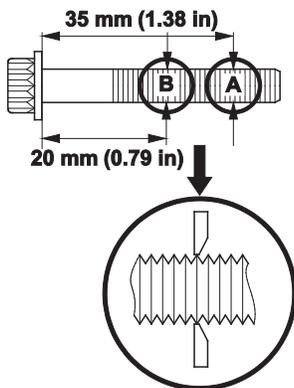
11. Apply new engine oil to the piston, the inside of the piston ring compressor, and the cylinder bore.

12. Install the piston/connecting rod assembly into the cylinder bore with the arrow on top of the piston facing the timing belt side of the engine.

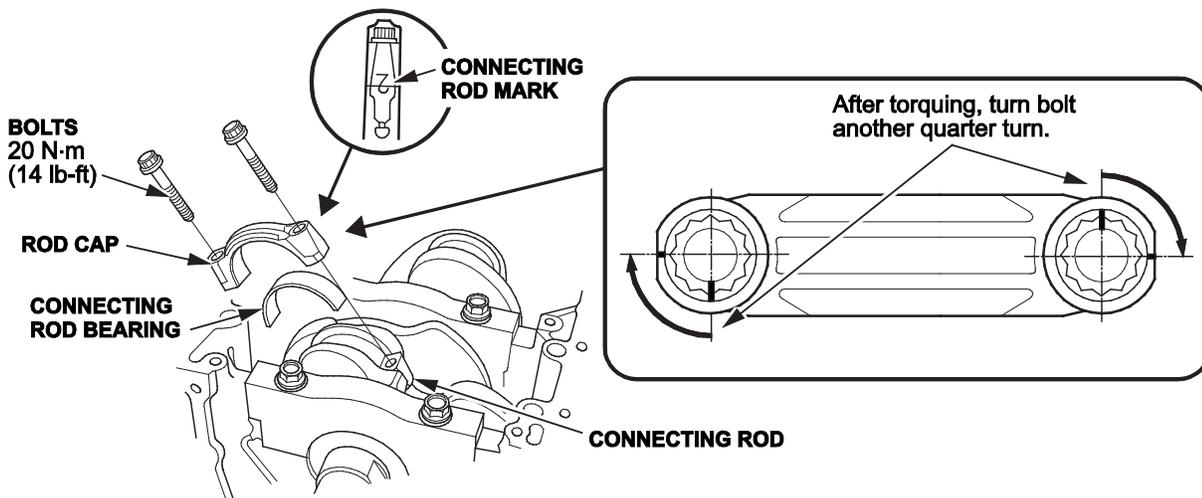
NOTE: Be careful not to damage the cylinder wall when installing the piston.



13. Measure the diameter of the connecting rod bolts to determine if they need replacement. Calculate the difference in diameter between point A and point B. It should not be more than **0–0.1 mm (0–0.004 in)**.



14. Apply new oil to the connecting rod bolt threads and flanges. Torque the bolts to **20 N•m (14 lb-ft)** then tighten the connecting rod bolts an additional **90 degrees**.



15. Reinstall the remaining components in the reverse order of removal.  
16. Replace spark plugs 1–4.  
17. Replace the oil filter and refill all fluids.  
18. Do the idle learn procedure.

END.